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THE POTASSIUM BROMIDE AND SUSPENSION OF THE ACTION OF THE STOMACH IN THE TREATMENT OF UNCONTROLLABLE VOMITING OF PREGNANCY.

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In the number of the *American Journal of the Medical Sciences* for January, 1878, p. 146, I published several cases of this intractable affection, treated successfully with this salt, administered in the form of enemata, in combination with nutrient and stimulating ingredients. Since the publication of those cases another has occurred in my practice, the history of which is as follows:—

On May 20th (1878) I was called to see the wife of a brother practitioner, who had been suffering for several days previously with constant nausea, but vomiting only after ingesting food or drink. Not regarding the case as a serious one, I simply interdicted the ingestion of anything but milk mixed with lime-water in moderate quantities, and ordered the oxalate of cerium in three-grain doses every three hours. This proved sufficient, and she resumed her accustomed diet in a few days. My attendance ceased on the 27th. She was three and a half months in her third pregnancy. She had aborted at about the same period of the two preceding pregnancies, but had not during either of them been annoyed with any nausea. The alleged cause of this attack was fright, and to a like cause she attributed the abortions. She is a corpulent woman, and was previous to this attack in good health.

On the eve of my departure to the meeting of the American Medical Association, at Buffalo (June 2), I was again called to see her, and found her suffering more than at any time during the first attack. She had taken the night before a purgative, consisting of blue mass and rhubarb, to relieve constipation. To this dose I attributed the recurrence, and supposing it would be relieved with the free evacuation of the bowels, I simply ordered pellets of ice at short intervals, and an effervescing draught of the granulated nitrate of cerium, but left directions that if the nausea and vomiting should persist, the oxalate of cerium should be resumed, and that failing the enemata should be given.

She continued to grow worse. The oxalate failed. A single enema, consisting of ℥ij of beef-tea, ℥j of brandy, five drops of laudanum, and thirty grains of the bromide, was administered, but occasioned so much

pain and distress that she positively refused to allow a repetition. On Thursday the 6th her condition became alarming, and Prof. Kleinschmidt was summoned to see her. He furnishes the following memoranda:—

"On the afternoon of Thursday, June 6th, Dr. ——— came to me for the purpose of consulting me upon the case of Mrs. ———. After detailing the course and symptoms of her trouble, he stated, in reply to my question, that among a number of remedies that had been tried the last was potas. bromid. given per anum. It had to a certain degree controlled the attacks of vomiting, but he had not given the drug for several days, fearing that the great depression of the heart's action, which now was a prominent feature of the case, was, in part at least, due to its action.

"Upon visiting patient, found her in bed; her face was slightly mottled as if from passive congestion; head and feet cold, pulse 160, feeble and of low pressure. She complained of severe paroxysmal pain about the region of the ductus communis choledochus, and was troubled by frequent attacks of a violent singultus. Had vomited just before my arrival, indeed had done so at intervals of one or two hours all day and the preceding night. No tenderness upon pressure over umbilical and iliac regions. She was very despondent, thought she would never get well, etc. In view of the therapeutic history, which included nearly all the remedies suggested for this complication of pregnancy, I was at a loss to suggest with any reasonable hope of success in an intractable case as the present appeared to be. I finally proposed to give a trial to acid. hydrocyan., which was one of the remedies that had not as yet been used; suggesting the following formula: ℞. Acid. hydrocyan. dilut. gtt. xij, potas. nitr. ʒij, mist. menth. ʒvj. Dose, ʒss every four hours. Patient to have ice and beef-tea in small quantities.

"Saw her again at 10 A. M. the following day. Taken altogether, her condition was somewhat improved. She had had a few hours of sleep, and had vomited but three times during the night, and twice since daybreak. Complained, however, of a constant fulness about the rectum, with an indication to evacuate her bowels, but upon repeated attempts had failed to do so. Had taken three doses of the mixture. Pulse 140, slight improvement in arterial pressure. Dr. ———, to whom I made the suggestion, that, in view of the failure of the acid to absolutely arrest the vomiting, we had better give the bromide another trial, still objecting for the reasons already given, the present treatment was continued; without marked change in the symptoms until Saturday, when Dr. Busey returned from Buffalo; re-instituting the injections of potass. bromid. with the remarkable and gratifying results detailed in his history of the case. I may state that I saw patient but three or four times before Dr. Busey's return."

Such was her condition at my visit in the afternoon of June 8th. A vaginal examination, made during this visit, was unsatisfactory. The index finger could be only partially introduced, because of the exquisite sensitiveness of the ostium vaginæ and spasm of the sphincter cunni, a condition not unlike that present in cases of vaginismus. It was impossible to determine the extent of the sensitiveness beyond the ostium. The uterus was depressed, the os seeming to press firmly against the pelvic floor. Flexion could not be detected, though it is not believed that there was any. Bi-manual examination was precluded by the condition of the genital canal, the thickness of the abdominal walls, and the aggravation of the nausea and hiccough by very slight pressure upon the abdominal surface.

At 6 P. M. (8th) an enema was administered, consisting of ℥ij of beef essence, thirty grains of the bromide of potash, ℥ss of brandy, and ten drops of laudanum, which was repeated at intervals of four hours until five had been given, then the intervals were lengthened to six, eight, and twelve hours successively. In some of the enemata milk was substituted for the beef essence. The first one occasioned considerable distress in the rectum, but with the aid of firm pressure to the anus it was retained, and the pain soon subsided. She vomited once several hours after the administration of the first enema, and when three had been given the nausea ceased. Nothing, except pellets of ice at brief intervals, was permitted to be taken by the mouth until after the administration of the fifth enema; then rice-water, at first in quantities not exceeding a teaspoonful, was given at intervals of half an hour. After the expiration of several hours champagne in drachm doses was allowed. On the second day after the resumption of alimentation by the stomach, milk was substituted for the rice-water in limited quantity in the beginning, but increased as the convalescence progressed. As usual in these cases recuperation was slow. Sometimes weeks elapse before recovery can be considered complete. During this period great care is requisite in directing the gradual and prudent resumption of accustomed diet. My patient had no recurrence, but her convalescence was interrupted by the supervention of two phenomena which I had not observed in previous cases. Well-marked jaundice appeared several days after the cessation of the nausea, associated with tenderness in the region of the paroxysmal pain previously referred to which had continued unabated. This I ascribed to the presence of gastro-duodenal catarrh. After a free evacuation of the bowels, which was secured by a lavement of tepid water, the icterus, together with the concomitant symptoms, subsided. Subsequently she was seized with a violent pain, which she described as beginning behind the symphysis pubis and extending obliquely upwards across the left iliac region, continuous in character, but unaccompanied with any tenderness along its course or with elevation of temperature. It recurred at the same hour (4 A. M.) three successive mornings, and was relieved each time by an enema of thirty drops of laudanum.

In this case as in those previously published, stomachal alimentation was prohibited for a time, and only gradually resumed by the ingestion in very small quantities of unirritating and bland articles of diet. I, as well as those who have witnessed with me the cases reported, have ascribed the rapid amelioration and complete subsidence of the distressing disturbances of the stomach to the influence of the potassium salt in subduing the irritation supposed to be due to distension of the uterine structure. Salutary as this influence may have been, it is not improbable that it has been overestimated. It may be that the prohibition of stomachal alimentation, thus securing rest to that organ, was equally important, and, perhaps, an essential factor in the successful management of the cases.

Tyler Smith was probably the first to suggest the importance of affording rest to the stomach in the treatment of this affection, though in his case absolute abstinence from food was not practised. At the time he first saw the patient, a woman, aged 19, of short stature, and "represented to

have been plump and in good condition" previous to the commencement of her sickness, two months before, she had so emaciated that she weighed but forty-seven and a half pounds.[1] He discarded all medication, and ordered one teaspoonful of milk and beef-tea to be given, alternately, every half hour. He insisted that it is "difficult or impossible for the stomach to reject a single teaspoonful of any bland, unirritating liquid, such as milk." This affirmation is too absolute. Cases occur in which the stomach will not tolerate anything, either solid or liquid. Occasionally, when some simple article of food is for a time retained, it simply accumulates, and is finally expelled undigested. Digestion seems to be suspended, or so disturbed that stomachal alimentation is impossible.

The nausea and vomiting of pregnancy are undoubtedly, in a vast majority of cases, reflex phenomena, but it is not improbable that occasional exceptions occur, and in a large proportion of, if not in all, the cases where these stomachic disturbances become serious and for a time uncontrollable, catarrhal conditions of the gastric mucous membrane are superadded. The clinical history of cases of acute gastric catarrh and of cases of protracted and uncontrollable vomiting of pregnancy are very analogous. Anorexia or a vitiated appetite, nausea, vomiting, thirst, epigastric oppression or pain, a saburral condition of the tongue, eructations of a glairy mucus, and despondency, are common to both affections. In fact there is not a symptom, except such as may relate to the reproductive organs, belonging to either which may not be present in the other. The most frequent cause of catarrh of the stomach is indigestion, due either to an indiscreet diet or to derangement of the digestive process. Impoverishment of the blood disqualifies the gastric fluids, and the inanition of pregnancy, so frequently the precursor of the more serious stomachic disturbances, may thus become a potential factor in their causation. This, however, was not so in the case presented, for there was no previous history of inanition, stomachic disturbance, or impairment of health, and the symptoms were sudden in their onset, and undoubtedly due to fright occasioned by the unexpected intrusion of a drunken man into the dwelling of the patient. Nevertheless, the subsequent history of the case establishes, presumptively at least, the presence of catarrh of the stomach, not however as the cause, but as the effect of the disturbance of the functions of the organ.

I am aware that in a majority of the post-mortem examinations of women who have died from this cause, no morbid condition of the stomach has been recognized, and that is true also of a majority of the cases of death from acute gastric catarrh. "Post-mortem pallor of the mucous membrane (Wilson Fox) is no sign of the absence of previous inflammatory action." This blanched condition may be due either to post-mortem contraction of the capillaries or to the action of the gastric juice.

[1] Trans. Lond. Obstet. Soc., vol. i. p. 335.

"It is only," remarks Fox,[1] "when stasis has existed to an extreme degree, or when punctiform extravasation has taken place from the capillaries, that the signs of inflammatory hyperæmia persist long after death; and even when present they seldom, except in cases of extensive inflammations from irritant poisons, occupy more than patches of the surface."

Notwithstanding the absence of macroscopic changes, Wilson Fox claims the presence of a condition corresponding to that of "cloudy swelling," which Virchow has demonstrated in the kidneys and livers of pregnant women. This he regards as the most characteristic appearance of catarrhal inflammation of the stomach, and he maintains, furthermore, that it arrests the "normal secretion of the gastric juice," and at the same time produces "a considerable amount of tenacious alkaline mucus."

In the case before us, the circumstance that fright in one instance produced uterine contractions, and in the subsequent pregnancy, at about the same period of gestation, excited reflex phenomena which culminated in such serious disturbance of the stomach, introduces the questionable influence of emotion as an exciting cause of the gastric disturbance.[2] Vomiting is a frequent complication of parturition, and difficult or depraved digestion, nausea and vomiting are not unusual co-attendants upon inflammatory conditions and malpositions of the uterus. When occurring during labor, the vomiting is probably always either reflex or emotional. When uterine ailments are complicated by stomachic disturbances, sooner or later inanition, too persistent to be ascribed to functional derangement, becomes associated. Sympathetic disturbances of the functions of respiration, circulation, and digestion, which control assimilation and nutrition, when long continued, seriously impair the general health and cause structural alterations. For a long time nervous vomiting has found a place among the numerous complaints of women, for the cure of which Semmola[3] has so successfully applied electricity, as Thomas[4] and Lente had, with equal success, to the treatment of the uncontrollable vomiting of pregnancy. The suggestion that this complication of pregnancy may be dependent upon structural alterations of the stomach is contradicted by the speedy efficacy of this agent in these allied affections, as likewise by the favourable result in instances of evacuation of the uterus, though unfortunately when artificially induced, death has followed in a majority of such cases.

It is not, however, my purpose to prove that gastric catarrh is a necessary cause of the nausea and vomiting of pregnancy, but to show its probable coexistence with these conditions when protracted, in order to estab-

[1] Diseases of the Stomach, p. 133.

[2] Cases have been reported by Andral, Hoffmann, Bassius, and Barry.

[3] Practitioner, July, 1878, p. 61.

[4] Medical Record, 1878.

lish upon pathological and therapeutic principles the correctness of the prohibition of stomachal alimentation as a remedial resource.[1]

The study of these phenomena involves the consideration of the exciting causes and of the associated pathological conditions.[2] Various theories have been offered in explanation. Sympathy with the uterus; congestive inflammation and great tenderness of the os and cervix in the latter months; some irritable conditions of the cervix; ulceration of the cervix; morbid irritation of the uterus, and inflammation of the deciduous membrane; distension and evolution of the uterine fibre or pelvic irritation; displacements and flexions of the uterus;[3] compression of the tissues of the uterus; absence of liquor amnii, allowing contact of the fœtus with the uterine walls; inanition, and gastric catarrh have all had their advocates, but no one of these hypotheses can be accepted as sufficient. In our case the conditions were associated with fright and extreme hyperæsthesia of the vulvo-vaginal canal as co-operating causes.

[1] Since this paper was delivered to the editor, Dr. H. F. Campbell of Georgia has read before the American Gynæcological Society a paper entitled "Rectal Alimentation in the Nausea and Inanition of Pregnancy," which will appear in the third volume of the Transactions of that Society. This paper relates more especially to the physiology of rectal alimentation, and incidentally to its value as a substitute for stomachal alimentation and medication in the management of the nausea and inanition of pregnancy; thus, practically, affirming the same view which I, looking at it from a different standpoint, have termed the prohibition of stomachal alimentation. Dr. C. seeks to establish the efficiency of nutrient enemata as the remedial resource, while I ascribe the benefit to suspension of the function of the stomach, while at the same time employing nutrient and stimulating enemata. In his study of the physiological action of rectal alimentation, it is probable that Dr. Campbell has, in a measure, been anticipated by Dr. Robert Battey of Rome, Georgia, who submitted to the Surgical Section of the American Medical Association, at the meeting at Buffalo, a paper entitled "Permeability of the Entire Alimentary Tract by Enema, with some of its Surgical Applications," a synopsis of which was published in the October No. (1878, p. 551) of the *Virginia Medical Monthly*.

[2] Monro, Obsts. Trans. Edinb., vol. iii. p. 94.

[3] Ibid.